Agricultural Pollution Reduction Activity Project in Romania

Agricultural Pollution Reduction Activity

FINAL REPORT

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In collaboration with IRG

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ACRONYMS

ANAR	National Administration "Apele Romane"
ANCA	National Association of Agricultural Consulting
APC	Agricultural Pollution Control (WB project)
APRA	Agricultural Pollution Reduction Activity in Romania
CGAP	Code of Good Agricultural Practices
CTO	Cognizant Technical Officer
DAI	Development Alternatives, Inc.
DADR	Directorate of Agriculture and Rural Development
DGA	General Directorate of Agriculture
EU	European Union
IRG	International Resources Group
IPM	Environmental Protection Inspectorate (also EPI)
IQC	Indefinite Quantity Contract
LAP	Local Action Program
LSG	Local Support Group
MoAFWE	Ministry of Agriculture, Forestry, Water, and Environment (also MAPAM)
MMGA	Ministry of Environment and Waters Management (also MoEWM)
NGO	Non-Governmental Organization
NVZ	Nitrate Vulnerable Zone
OJCA	County Office of Agriculture Consulting
TNA	Training Needs Assessment
TO	Task Order
TOT	Training of Trainers
SC	Steering Committee
SGA	County Office of Waters Management
SOW	Scope of Work
USAID	United States Agency for International Development
WB	World Bank
WP	Work Plan

TABLE OF CONTENTS

FINAL REPORT

Development Alternatives, Inc. (DAI) and International Resources Group (IRG), a DAI subcontractor under the Integrated Water and Coastal Resources Management Indefinite Quantity Contract (Water IQC), have implemented the Task Order entitled "Agricultural Pollution Reduction Activity in Romania" (APRA) since September 30, 2002. This Report summarizes the accomplishments of the APRA team in implementing the Task Order that concluded February 29, 2004 (as a result of a two-month no cost extension). The report is organized into three sections. The first section provides an overview of the project's structure. The second section focuses on accomplishments and includes a subsection that describes deliverables produced as required in the Scope of Work and APRA Work Plan, and second subsection that analyzes accomplishments in the context of the set of project performance indicators established at the outset of the project in discussions with the USAID CTO. The final section presents recommendations for follow-up assistance.

1. STRUCTURE OF THE PROJECT

1.1 PROJECT TEAM

The project management team consisted of the U.S. based Project Manager, a Romania Deputy Project Manager, and a U.S. administrator responsible for backstopping the project.[1] DAI established a local office in Bucharest, staffed by the Deputy Project Manager and an administrative and technical support unit. In addition, the project utilized four U.S. based consultants, ten Romanian consultants, and three Romanian subcontractors.

1.2 ORGANIZATION OF THE ACTIVITIES

The APRA Task Order was designed to assist Romania in its efforts to strengthen its capacity to improve water quality, mainly by reducing nitrates pollution from agricultural sources. It included both a local and national component. At the local level, the focus was on assisting Calarasi County in identifying actions for reducing nitrates pollution, mainly from agricultural sources. This county is located on the Danube, very near its Delta, and the Black Sea coast. It is a heavily polluted area, due to high nutrient discharges from agricultural sources. At the national level, APRA assisted in the review and/or development of guidance documents, the Code of Good Agricultural Practices, and the design of the Local Action Program process that would be used in other counties in Romania to address nitrate problems.

The assistance program was organized into four phases. The first phase involved the development of the Work Plan and the organization of the work, including the establishment of a Steering Committee and identifying a network of national and local counterparts. The second phase focused on the assessment of water quality in Calarasi

[1] The organizational structure described was implemented in May 2003 as a result of personnel changes that necessitated the increased involvement of the U.S. based Project Manager, as well as the support of a Deputy Project Manager, in country.

County and the development of guidance on water quality monitoring. In the third phase of the work, options for reducing nitrate pollution were identified and assessed. In the final phase, the APRA team produced roll-out recommendations and convened a national workshop to present project results.

1.3 COORDINATION WITH COUNTERPARTS AND OTHER DONORS

As noted above, the APRA team's activities were coordinated by a Steering Committee chaired by the State Secretary for Water in the Ministry. In addition, the team collaborated with the Agricultural Advisor to the State Secretary, particularly on all guidance documents and the Code of Good Agricultural Practices. The APRA team made frequent visits to Calarasi and worked closely with county officials in agriculture, water, and environmental protection. The APRA project team also collaborated with staff on the World Bank's Agricultural Pollution Control Project, implemented in seven communes in the central part of Calarasi County.

2. SUMMARY OF ACCOMPLISHMENTS

2.1 WORK PLAN DELIVERABLES

During Task Order implementation, most of the deliverables proposed in the Work Plan were prepared. In some cases, based on discussions with the USAID CTO and the Ministry, deliverables proposed in the Work Plan were changed, or approached in a different way. At the same time, a number of additional deliverables were prepared at the request of the beneficiaries. This section of the report describes the execution of the Work Plan, enumerates the deliverables that were proposed in the Work Plan and those that were actually prepared during the APRA project. The summary of these is then synthetically illustrated in a table.

Phase II – Assessment of Soil and Water Quality

Phase II focused on the assessment of soil and water quality, principally in Calarasi County. It included three tasks and five deliverables.

Task 2.1 - Characterization of Pollution Sources and Impacts in Calarasi County was designed to accomplish two main objectives:

1) to describe the current situation in Calarasi County in terms of nitrate pollution, sources of pollution, and other information that would be germane to the elaboration of the Local Action Program, proposed for Phase III; and
2) based on the experience of collecting and analyzing data sources, to design a Model for Data Collection.

The two proposed deliverables for this task were:

- Interim Report (including: Inventory on pollution sources, illustrative maps);
- Model for Data Collection.

Interim Report

The Interim Report – essentially the Characterization Report for Calarasi County – was prepared as two reports rather than a single one.

The first report described pollution problems and sources throughout Calarasi County and presented basic socio-economic information, data on nitrate-related illnesses, and detailed information on the farm economy in the County. Shortly after the first report was drafted, the Ministry informed the APRA team that a decision had been taken to designate nitrate vulnerable zones (NVZs) throughout Romania (rather than designate the entire country as a nitrate vulnerable zone). This had ramifications for the Calarasi County Local Action Program because actions would only be developed for the two small areas designated as NVZs in the County.

Thus, a second report was developed that presented detailed maps and data for the two NVZs in Calarasi County and characterized the hydrogeology for the two NVZs and the areas affecting water quality in the NVZs and affected by the NVZs.

Model for Data Collection

The model for data collection originally had been conceived as a set of recommendations to guide the collection of data needed to characterize pollution problems and sources in the NVZs and support the development of Local Action Programs. However, the APRA team decided to develop a simulation model that could utilize the data to analyze nitrate pollution problems and also evaluate the impact of alternative agricultural practices on nitrate concentrations.

As a result, the deliverable provides:

- the model for data collection, and
- an excel spreadsheet template for managing the data.

In addition, an analytical tool has been developed that could be used for several purposes:

(1) to refine the designation of NVZs; and,
(2) to simulate the water quality improvements resulting from actions both at the NVZ and individual farm levels.

Task 2.2 - Development of Norms and Methodology to Determine Nitrogen and Phosphorus Levels in Soil and Water was a task requested by the Ministry and the World Bank. The Ministry required norms to guide the monitoring program mandated in the EU Nitrates Directive, while the World Bank wanted some advice in setting up the system of groundwater testing wells in the pilot areas in Calarasi County.

As the APRA team worked to develop these norms, it became apparent that Romania had already formalized an exhaustive set of norms and standards covering the sampling, storage, and analysis of water quality samples. As a result, the major need was the development of guidance on the establishment of a national monitoring system for nitrates and a monitoring protocol for individual NVZs.

The guidance document produced by the APRA team covers the design and implementation of soil and water monitoring programs focused on nitrates and includes an extensive annex on all relevant norms and standards for nitrogen and phosphorus parameters.

The EU Nitrates Directive only requires monitoring of nitrates in water. However, monitoring/testing of soils was viewed by the team as essential to understand the impact of agricultural practices since nitrogen not taken up by crops must move through the soil to ground water and surface water.

The guidance document also includes recommendations for the design of NVZ monitoring protocols, covering the location of sampling points, the quality parameters that should be monitored, and the frequency of tests.

Task 2.3 - Water and Soil Quality Field Tests involved a series of water and soil quality tests in Calarasi County and procurement of a mobile lab to facilitate field sampling.

The main deliverables were:

- Memorandum on testing methods;
- Equipment procurement;
- Interim Report (including test results).

Memorandum on testing methods

Two memoranda were prepared in support of the testing methods. Because several members of the APRA team have water quality monitoring expertise, the memoranda on testing was not required to describe the norms and standards to be followed. Instead, the two memoranda focused only on the location of the sampling points for the two sets of water and soil quality test that were conducted.

The first memorandum presented recommendations for the first set of soil and water samples and recommended 30 sites, 10 each in three areas of Calarasi County.
The second memorandum provided recommendations for the second set of water and soil samples, focused in the vicinity of the two NVZs, in the western area of Calarasi County.

Both memoranda have been closely followed while undertaking the field testing. Thus, the resulting reports also provided comments and recommendations for the specification of sampling points in addition to the test results.

Equipment Procurement

As part of the APRA project and in support of future water and soil quality testing, a small committee was established to prepare recommendations on the specification of a mobile lab and associated equipment. Several memoranda were prepared and discussed prior to the selection of the vehicle and the associated field sampling equipment.

The vehicle selected was a Ford F-250 with a utility body for storage of the testing equipment. The soil and water testing equipment plus a portable generator and pump were procured from three U.S. equipment vendors. As the project concluded at the end of

February, the mobile lab was in route from the U.S. to the Romanian port of Constanta on the Black Sea, with delivery anticipated at the end of March, 2004.

The purchased mobile-lab is designated to become property of the Romania National Water Authority (ANAR), as a donation from the US Government, to assist the Government of Romania in testing water and soil quality in accordance with international environmental standards.

Interim Report on Testing

The APRA team prepared reports summarizing the results of two sets of water and soil quality tests. The first report covered tests for thirty sampling points in three areas of Calarasi County:

- Galatui (in the eastern portion of the county);
- Mostistea (in the center of the county);
- Arges (on the western border of the county).

For the second set of water and soil quality tests, sites were selected for the two NVZ, referred to as Sohatu and Frumusani NVZs because of the proximity to these two communes. Twelve water and soil quality sampling points were recommended including six for surface water and six for groundwater wells.

Results have also corroborated the initial designation of the two NVZ areas and provide useful baseline data for the Local Action Program to be developed in Calarasi.

Phase III – Identification and Implementation of Priority Technical Assistance

Phase III included four tasks and focused on the selection of actions to address nitrates pollution in Romania, generally, and in the two NVZs in Calarasi County, specifically. As indicated in the APRA Work Plan, Task 3.4 – Study Tour to the U.S was included as an optional activity. Over the course of the project, a decision was taken in collaboration with the beneficiaries to use the resources earmarked for the study tour for the preparation and publication of the Small Farm Guide described in Task 3.2. Thus, only three of the four tasks in Phase III were undertaken.

Task 3.1 - Analysis of Options for Environmentally-Friendly Agricultural Practices was designed to identify and analyze good practices in agriculture that would reduce nitrate pollution. Initially, the task was expected to involve the elaboration of a list of good agricultural practices, recommendations for a public awareness campaign, and preparation of a memorandum on potential pilot sites for demonstrating good agricultural practices. However, the scope of the task changed after the Work Plan was developed as follows:

- The Ministry specifically requested a review of the draft Code of Good Agricultural Practices (CGAP), including an analysis of practices as well as the structure of the document;
- The Ministry asked APRA to prepare a guide focusing on good agricultural practices that are appropriate for small farms.

- Instead of a broad-based recommendations for a public awareness campaign, APRA provided a public awareness leaflet covering the EU Nitrates Directive and the CGAP, and included information on how to obtain additional other materials or assistance;
- The memorandum on pilot sites was cancelled because it was determined that the World Bank's agricultural piloting activities covered crops and fertilizers as well as livestock wastes and were more than adequate to demonstrate a range of good agricultural practices.

Review of the CGAP

Several members of the APRA team reviewed the Romanian CGAP and submitted comments. A synthesis of all reviewers' comments was prepared and submitted to the Ministry. In addition, the APRA team prepared a Farm Waste Management Plan for inclusion in the next revision of the CGAP.[2]

Small Farm Guide

At the request of the Ministry, APRA developed a guide for small farms covering the EU Nitrates Directive, NVZs, and good agricultural practices appropriate for smaller farm operations. APRA arranged for publishing and provided 10,000 copies of the small farm guide to the Ministry.

Public Awareness Leaflet

APRA developed a public information leaflet (draft) focusing on the issues of the EU Nitrates Directive, good agricultural practices, the rules for farmers in NVZ, and describing sources of information and technical assistance for farmers. The Ministry was provided with the electronic version of this leaflet for future use in a national public awareness campaign to support implementation of the Nitrates Directive.

Task 3.2 - Preparation of the Calarasi County Agricultural Pollution Reduction Action Programme was envisioned to culminate in the completion of the first Local Action Program (LAP) in Romania, both to meet the needs for a LAP in Calarasi County and to provide a model for subsequent LAPs throughout Romania. Thus, the two deliverables were to include:

- draft LAP, and
- final LAP.

As the APRA team began to work on the LAP and discussed content and process related to the Calarasi LAP, it became apparent that the National Implementation Plan for the Nitrates Directive lacked detailed guidance on LAP development. Through a series of discussions between the Ministry and APRA, guidance on the LAP development process was elaborated. As this guidance took form, it became clear that it would be inappropriate for the APRA team to prepare the Calarasi LAP, a task that is the responsibility of the

[2] As described in an agreement signed by the Ministry, USAID, and the Project Manager and Deputy Project Manager, some addition inputs are to be provided for the revised CGAP including a new table of contents, a short chapter on how to use the Code, and a revised chapter on the EU Nitrates Directive, NVZs, and Local Action Programs. These will be provided at no cost to USAID or the Ministry.

Local Support Group consisting of 15-20 members selected from the county and local government authorities, farmer groups, NGOs, and community representatives. As result, APRA refocused the task on two activities:

1) Elaboration of guidance on LAP development;
2) Provision of information for the future use of the Calarasi County Local Support Group (once it is appointed) on pollution problems, sources, and options for addressing nitrate problems.

APRA prepared a single report covering both of the LAP topics described above. The guidance on the LAP process was, as noted, developed in cooperation with the Ministry. The synthesis of the pollution problems and sources for the two NVZs was developed from the two reports prepared for Task 2.1. To develop proposed actions to address nitrate pollution problems, APRA convened a workshop involving a broad spectrum of participants from Calarasi County, the APRA team, and representatives from national authorities and utilized small discussion groups to identify three categories of actions: 1) animal waste management; 2) crop cultivation and fertilizers; and 3) non-agricultural sources (such as wastewater treatment and sanitation, landfills). Following the workshop, APRA also developed some preliminary cost estimates of some of the potential actions entailing significant costs including improved waste management by the large livestock operations, construction of a regional landfill, and a wastewater treatment plant.

The LAP report also includes the proposed Monitoring Plan of Water Quality, for the two designated NVZs (for Calarasi County).

Task 3.3 - Development of the Calarasi Training Center and Implementation of Training Course was an activity designed to complement Tasks 3.1 and 3.2 by facilitating the training of agricultural extension staff and farmers on the CGAP, the EU Nitrates Directive, and the LAP. Four deliverables were proposed in the work plan:

- Training Needs Assessment;
- Memorandum on Training Center Procurement;
- Training courses and related report;
- List of potential local trainers.

Training Needs Assessment

The Training Needs Assessment (TNA) was designed to help the APRA team determine the types of training courses that would be most beneficial, target groups for participation in training courses, and identify potential trainers. Input for the TNA was obtained using in-person interviews and a written questionnaire. The TNA provided the basis for the methodological approach that was used later in designing the Training Program.

Training Center Procurement

APRA held a series of discussions with counterparts in Calarasi County to identify the appropriate site for a Training Center. After these discussions, it was agreed that the General Directorate of Agriculture (DGA), now the DADR – Directorate of Agriculture and Rural Development office in Calarasi would provide the best venue and institutional support for the Training Center. APRA initiated efforts to acquire surplus furniture from another USAID contractor that could then be transferred to the Calarasi DGA/ DADR for

use in the Training Center. Also, while concluding the APRA project, several pieces of equipment[3] purchased by USAID contractors, were transferred, as Grant-in-Aid to DADR, especially for the use and furnishing of the Training Center.

Training of Trainers (TOT) Course and List of Local Trainers

One of the major recommendations of the TNA was to utilize the TOT approach to training extension staff in Calarasi so that the course could be offered by a number of instructors to small groups of farmers. The APRA team developed a training course covering the EU Nitrates Directive, farm waste management, and fertilizer application, following the main prescriptions from the Code of Good Agricultural Practices. With assistance from counterparts in Calarasi, a List of Local Trainers was prepared. Over a 3-day period in February 2004, the APRA team presented the TOT to a group of 20 local trainers at the DGA/ DADR Training Center in Calarasi. APRA has also prepared a Training Manual to augment the course materials and has provided this training package to the Ministry, in view of its further dissemination through the ANCA – the National Association of Agricultural Consulting county networks.

Phase IV – Roll-out and Dissemination

Roll-out and dissemination included two tasks focusing on:

- the elaboration of a set of lessons learned to guide follow-up work in support of implementation of the EU Nitrates Directive; and
- the transfer of the project deliverables to other regions of Romania.

Task 4.1 - Development of Recommendations for Roll-Out of Project Results involved the preparation of a report with recommendations for follow-up activities organized into four areas: NVZ designation, water and soil quality monitoring, good agricultural practices, and local action plan development.

The second task in Phase IV, ***Task 4.2 - Final Workshop***, had been conceived originally as a workshop for counterparts in Calarasi, mainly focused on the Local Action Program. However, at the request of the Ministry, the final workshop was targeted to a national audience and focused on a comprehensive presentation of all APRA tasks, including the roll-out report's recommendations. The final workshop was held in Calarasi in February 2004 and attracted more than 80 participants from all over Romania.

Following the Final Workshop, a formal Memorandum was signed with the Ministry and USAID, which concluded and listed all the project's achievements.

As indicated at the beginning, the Table 1 below, illustrates synthetically all these project accomplishments.

[3] The equipment donated comprised: computers, printers, overhead projectors, copy machine, slides projector, projections screen, scanner, binding machine, white-board and flip-chart easel, etc. Additionally, the project has also disposed of equipment and furniture in support to other organizations in Calarasi too, such as IPM, OJCA and SGA, as well as to MAPAM/ MMGA.

Table 1 – Summary of APRA Deliverables

PHASE II – ASSESSMENT OF WATER AND SOIL QUALITY		
Task	**Deliverable Proposed in APRA Work Plan**	**Deliverable Produced by APRA**
Task 2.1 - Characterization of Pollution Sources and Impacts in Calarasi County	• Interim Report (including: Inventory on pollution sources; Model for data collection; illustrative Maps)	• Interim Report on pollution problems and sources in Calarasi County • Interim Report on pollution sources and problems in the two NVZs in Calarasi, including characterization of the hydrogeology of the area • Nitrate pollution simulation model, including recommendations for data collection • A series of illustrative maps are included to all the reports indicated above
Task 2.2 - Development of Norms and Methodology to Determine Nitrogen and Phosphorus Levels in Soil and Water	• Interim Report on norms and methodology (including recommendations for a unitary set)	• Guidance on water quality monitoring for EU Nitrates Directive implementation (including the list of all norms and standards addressing the testing methodology – from field sampling to lab processing)
Task 2.3 - Water and Soil Quality Field Tests	• Memorandum on testing methods and equipment procurement • Interim Report (including test results)	• Memoranda on selection of testing sites • Memoranda on equipment procurement • Procurement of mobile lab • Reports on two sets of field testing of soil and water quality
PHASE III – IDENTIFICATION AND IMPLEMENTATION OF PRIORITY TECHNICAL ASSISTANCE		
Task	**Deliverable Proposed in APRA Work Plan**	**Deliverable Produced by APRA**
Task 3.1 - Analysis of Options for Environmentally-Friendly Agricultural Practices; Pilot Project Sites Selection	• Interim Report on good agricultural practices (including: List of recommended CGAP; Data on public awareness and involvement) • Memorandum on pilot sites	• Comments on draft Romanian CGAP • Development of Farm Waste Management Plan • Edit and publish 10,000 copies of Small Farm Guide on the EU Nitrates Directive and good agricultural practices • Public Awareness Leaflet on EU Nitrates Directive and CGAP

Task 3.2 - Preparation of the Calarasi County Agricultural Pollution Reduction Action Programme	• Draft Action Programme (set of Actions, and economic analysis) • Final Action Programme (Model)	• Report covering recommendations for LAP process and actions to be included in the Calarasi LAP
Task 3.3 - Development of the Calarasi Training Center and Implementation of Training Courses	• Training Needs Assessment • Memorandum on Training Center Procurement • Training courses and related report • List of potential local trainers	• Training Needs Assessment • Memorandum on Training Center Procurement • Training of Trainers course • List of potential local trainers • Training Manual
Task 3.4 Study Tour to the United States	• Study Tour proposal • Study Tour • Study Tour Report	• None – task replaced by the development and publishing of the Small Farm Guide
PHASE IV – ROLL-OUT AND DISSEMINATION		
Task	**Deliverable Proposed in APRA Work Plan**	**Deliverable Produced by APRA**
Task 4.1 - Development of Recommendations for Roll Out of Project Results	• Roll Out Report (including: comparative analysis; Lessons learned; Recommendations)	• Roll Out Report (including: comparative analysis; Lessons learned; Recommendations)
Task 4.2 - Final Workshop	• Workshop Proposal • Workshop Presentations • Workshop Summary	• Workshop Proposal • Workshop Presentations • Workshop Summary

2.2 PROJECT PERFORMANCE INDICATORS

During Phase I of the project, the APRA team proposed a set of performance indicators to be used to evaluate the implementation and impact of the assistance effort. Six of the seven performance indicators provide a means for evaluating the implementation process, while one indicator was proposed for evaluating the impact of the assistance effort.

The Table 2, on the next page, summarizes the APRA team's self-evaluation of the project's performance. In terms of the six "process" indicators, the APRA project exceeded the quantitative target for four of the six indicators. For one of the remaining process indicators – the number of roll-out recommendations, the target set during the work planning process of 30 recommendations, was determined, ex post, to have been a difficult ex ante choice because counting up recommendations doesn't account for their relative importance or significance. In fact, 19 recommendations were included in the roll-out report, but these could have been organized into fewer or more without losing their level of importance. For the sixth process indicator related to the number of norms transferred from the U.S., it was determined during implementation of the project that Romania already had a comprehensive set of norms, but needed guidance on monitoring.

The "impact" indicator selected during the work plan process - % reduction in nitrates and phosphates – is an excellent indicator of the progress that will be achieved once Calarasi County begins to implement the Local Action Program. However, as noted in the discussion of deliverables for Task 3.2, the APRA project's support for the LAP only extended as far as providing recommended actions for reducing nitrates. According to the

LAP process developed by the APRA team in collaboration with the Ministry, a Local Support Group will be tasked to finalize the LAP. Implementation of the Calarasi LAP (and all other LAPs in Romania) would commence once Romania's membership in the EU is approved (currently expected in 2007).[4] Thus, while no reductions in nitrates and phosphates can be measured at this time, Calarasi County has a set of recommendations from which to draw in finalizing the LAP and should begin to observe water quality improvements as the LAP is implemented.

Table 2 – Summary of Project Performance Indicators

"Process" Indicators Proposed in the APRA Work Plan	Indicator Level	APRA Performance
Number of persons that will be trained	40	Approximately 150 persons were involved in two LAP workshops, final workshop, and TOT training
Number of water/soil sampling points to be monitored for nitrogen and phosphates concentration	20	One-time samples were taken at 30 sites and 12 monitoring sites were established for the two NVZs in Calarasi County
Number of activities proposed and recommendations suggested for the Action Programme draft	5	20 actions in four categories were recommended. The categories were: measures to reduce animal waste, fertilizer application measures, non-agricultural measures, and public awareness and education
Number of norms and methodologies for water/soil quality tests transferred (from the US experience)	5	Romania had a complete set of norms and standards for water and soil testing – APRA developed guidance on monitoring of nitrates
Number of CGAP and pilot activities recommended	6	In the Small Farm Guide, 10 good practices were recommended to address nitrates problems associated with animal waste storage and fertilizer and manure applications; No pilot activities were evaluated or recommended as this sub-task would have overlapped the WB project
Number of recommendations for the project roll-out	30	Recommendations cover entire spectrum of issues related to implementation of the nitrates directive; 19 major recommendations organized into the following categories: NVZ designation, water and soil quality monitoring, good agricultural practices, and local action plans
"Impact" Indicator Proposed in the APRA Work Plan	**Indicator Level**	**APRA Performance**
Reduction with 10% of the level of pollution with N and PO_4 in the first year, and with 20% in the second year of Action Programme implementation and of the Manual for good agricultural practices applied in Calarasi County	10% - 20%	In accordance with the National Implementation Plan of the EU Directive for Nitrates, the LAP will not be implemented until Romania joins the EU (currently projected for 2007) and receives EU support to carry out the necessary investments

[4] In principle, LAP implementation could be initiated prior to accession. Many of the proposed actions involve low costs or even generate savings to farmers through improved nutrient management practices. However, for those actions entailing significant investment costs, implementation is not likely to proceed without some financial support expected from the EU.

3. RECOMMENDATIONS FOR FOLLOW-UP ASSISTANCE

While the APRA project has completed its activities and provided all of its project deliverables, there were a number of logical extensions of the current project that became apparent to the team and the Ministry in the last few weeks of the project. All of these follow-up activities have been recommended to, discussed with, and endorsed by the Ministry. In the event that USAID has resources and the follow-up activities described below are deemed to be of high priority, the APRA project team believes they would provide a valuable assistance effort.

The proposed follow-up activities are divided into three categories: (1) technical assistance; (2) training; and (3) public awareness. They are described in greater detail in the Roll-out Report and summarized below:

Technical Assistance:

- Expand the nitrate pollution simulation model (data model) to: (1) facilitate refined analysis of the designation of NVZs by adding a fate/transport and risk component; and (2) provide cost estimates for alternative nitrate mitigation actions (the model currently only has the capabilities to estimate nitrate reductions);

- Apply the Monitoring Guidance to all NVZs, enabling Romania to better gauge the additional investment costs (construction of monitoring wells) and annual operation costs of a national nitrates monitoring program;

- Undertake a comprehensive revision of the CGAP, based on APRA comments, publish and distribute the revised draft to the public, and manage the public comment process prior to finalizing the CGAP;

- Support the Calarasi Local Support group in finalizing the LAP, providing refined analysis of costs of selected actions; assist in establishing operating rules for the Local Support Group and in conducting public hearings on the draft LAP;

- Assist the Ministry in finalizing the National Implementation Plan and estimating national implementation costs; identify potential sources of financing for investments in nutrient reduction.

Training:

- Replicate the TOT course throughout Romania; provide advice on setting up Training Centers; revise the Training Manual;

- Conduct a national training course on LAP development for Local Support Groups for the 82 NVZs designated in Romania;

- Conduct training on selection of NVZ sampling points and use of the mobile lab for field testing.

Public Awareness:

- Revise the leaflet on the EU Nitrates Directive and CGAP; publish and disseminate leaflet to the public;

- Develop the farm waste management plan into an extension brochure for use by the local DADR offices throughout Romania.

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